209.1 - X-Ray Diffraction (powder and solid forms)

SRMs 656, 676a, 674b, 1878a and 1879a consist of high phase purity materials for use in the quantitative analysis of samples by the internal standard method. SRM 656 consists of 2 silicon nitride powders, one high in a, the other high in b. SRMs 640d, 660b, 675, and 1976a consist of materials with select crystallographic and microstructure properties used in the evaluation of diffraction equipment for the following variables; 1) d-spacing or line position, 2) line or instrument intensity, and 3) instrumental or sample contributions to the shape of reflection profiles. SRM 1976a, a sintered alumina plate, is also certified with respect to lattice parameters as well as 13 relative intensity values from 22° to 155° 2q (Cu Ka). SRM 1990 is certified for lattice parameter. SRM 1994 is certified for miss orientation of the crystal axis relative to the surface normal.

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PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

SRM	Description	Unit Size	XRD Application
640d	Silicon Powder Line Position + Line Shape Std for Powder Dif	7.5 g	Line Position Line Shape
656	Silicon Nitride Powders for Quantitative Analysis	2 x 10 g	Quantitative Analysis
660b	Line Position and Line Shape, Std for Powder Diffraction	6 g	Line Position Line Shape
674b	X-Ray Powder Diffraction, Intensity Set Quant Analysis	10.00 g (powder)	Quantitative Analysis
675	Line Position, Mica (XRD)	7.5 g	Line Position - Low 2θ
676a	Alumina Powder for Quantitative Analysis by X-ray Diffraction	20 g	Quantitative Analysis
1878a	Respirable Alpha Quartz	5 g	Quantitative Analysis
1879a	Respirable Cristobalite	5 g	Quantitative Analysis
1976a	Instrument Response Std for X-Ray Powder Diffraction	1 disc	Instrument Response
1990	Lattice Parameter/Single, Crystal (Ruby Spheres)	3 spheres	Quantitative Analysis
1994	Standard Silicon Single Crystal Wafer for Crystalline Orientation	100-mm wafer	Crystalline Orientation
1995	Standard Sapphire Single Crystal Wafer for Crystalline Orientation	50-mm wafer	Crystalline Orientation
2000	Calibration Standard for High-Resolution X-Ray Diffraction	1 block	Line Position

Values in parentheses are not certified but are provided as reference values or are given for information only.